

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Specification at page 6, line 24:

2) Perfluorinated or partially fluorinated polymers containing aromatic rings such as those described in WO 95/08581[, WO 95/08581] and WO 97/25369 (Ballard Power Systems) which have been functionalised with SO_3H , PO_2H_2 , PO_3H_2 , $\text{CH}_2\text{PO}_3\text{H}_2$, COOH , OSO_3H , OPO_2H_2 , OPO_3H_2 . Also included are radiation or chemically grafted perfluorinated polymers, in which a perfluorinated carbon chain, for example, PTFE, fluorinated ethylene-propylene (FEP), tetrafluoroethylene-ethylene (ETFE) copolymers, tetrafluoroethylene-perfluoroalkoxy (PFA) copolymers, poly (vinyl fluoride) (PVF) and poly (vinylidene fluoride) (PVDF) is activated by radiation or chemical initiation in the presence of a monomer, such as styrene, which can be functionalised to contain an ion exchange group.

Specification at page 8, line 8:

The solid polymer electrolyte membrane prepared by the process of the present invention may be employed as is or as a component of the ion-exchange membrane of a solid polymer electrolyte chemical cell, such as a PEMFC. Accordingly, the present invention further provides a membrane prepared by the process of the present invention. The membrane prepared by the process of the present invention is [suitably] suitable for use in a fuel cell. When for use in a fuel cell, the total thickness of the membrane is suitably less than $200\mu\text{m}$ and preferably less than $100\mu\text{m}$.

IN THE CLAIMS:

1 1. (Amended) A process for preparing a solid polymer
2 electrolyte membrane comprising an ion-conducting polymer, a catalyst and a high
3 surface area supported material, which process comprises:

4 (a) associating the catalyst with the support material to form a
5 catalysed support; and

6 (b) combining the catalysed support with [an] the ion-conducting
7 polymer [composition].

1 2. (Amended) A process according to claim 1, [which
2 comprises, as] wherein step (b)[,] comprises combining the catalysed support with
3 [an] the ion-conducting polymer in a liquid medium that is aqueous-based and is
4 essentially free from organic solvents.

1 3. (Amended) A process according to claim 1 [or claim 2],
2 wherein the catalyst comprises one or more precious metals, or combinations
3 thereof, and/or other transition group metals.

1 4. (Amended) A process according to [any preceding] claim 1,
2 wherein the catalyst comprises platinum.

1 5. (Amended) A process according to [any preceding] claim 1,
2 wherein the catalyst is deposited onto the support material to a loading of between
3 0.01 to 50.0% by weight of the total catalysed support.

1 8. (Amended) A process according to [any preceding] claim 1,
2 wherein the amount of catalysed support incorporated into the membrane is such
3 that the metal loading is lower than 0.1mg/cm².

1 9. (Amended) A process according to claim 8, wherein the
2 amount of catalysed support incorporated into the membrane is such that the metal
3 loading is lower than 0.05mg/cm².

1 10. (Amended) A process according to claim 9, wherein the
2 amount of catalysed support incorporated into the membrane is such that the metal
3 loading is lower than 0.03mg/cm².

1 11. (Amended) A process according to [any preceding] claim 1,
2 wherein the high surface support material is non-electrically conducting.

1 12. (Amended) A process according to [any preceding] claim 1,
2 wherein the high surface area support material is selected from the group consisting
3 of silica, titania, alumina, zirconium oxides, zirconium silicates, tungsten oxides,
4 tin oxides and zeolites.

1 13. (Amended) A process according to [any preceding] claim 1,
2 wherein the support material is in the form of fibres.

1 14. (Amended) A process according to [any one of claims 1 to
2 12] claim 1, wherein the support material is in the form of particles with a mean
3 particle size in the range of from 0.001µm to 10µm.

1 16. (Amended) A process according to [any preceding] claim 1,
2 wherein the ion-conducting polymer [composition is] comprises an essentially
3 aqueous solution of a perfluorinated co-polymer with ion-exchange groups.

1 17. (Amended) A process according to [any preceding] claim 1,
2 wherein the catalysed support[,] is in particle or fibre form[, is added] and step (b)
3 comprises directly adding the catalysed support to a solution of the ion-conducting
4 polymer electrolyte.

1 18. (Amended) A process according to [any of claims] claim 1
2 [to 11 or 13 to 15], wherein the catalysed support is in particle form and is applied
3 as a binder to form a fibre network to which the ion-conducting polymer is
4 subsequently applied to produce the membrane.

1 19. (Amended) A process according to [any of claims] claim 1
2 [to 13 or 16], wherein the catalysed support is in fibre form and itself is formed
3 into a fibre network which is thereafter bound with a binder, and the ion-conducting
4 polymer is subsequently applied to produce the membrane.

1 20. (Amended) A membrane prepared by a process according to
2 [any preceding] claim 1.

21. (Amended) A membrane electrode assembly comprising a
membrane prepared by a process according to [any one of claims] claim 1 [to 19].

1 22. (Amended) A fuel cell comprising a membrane prepared by a
2 process according to [any one of claims] claim 1 [to 19].